

Kilometres and distance; estimating longer lengths

MODULE 4 · MEASURES — LENGTH, WEIGHT AND CAPACITY MEASURES

HOW TO ANSWER TODAY

- **Convert units.** To a SMALLER unit → multiply. To a BIGGER unit → divide. Common factors:
 $\text{cm} \leftrightarrow \text{mm} \times 10$, $\text{m} \leftrightarrow \text{cm} \times 100$, $\text{km} \leftrightarrow \text{m} \times 1,000$, $\text{kg} \leftrightarrow \text{g} \times 1,000$, $\text{l} \leftrightarrow \text{ml} \times 1,000$.
 $250 \text{ cm} \rightarrow \text{m}: \div 100 = 2.5 \text{ m}$ · $3.5 \text{ kg} \rightarrow \text{g}: \times 1,000 = 3,500 \text{ g}$
- **Estimate gap.** Subtract the smaller from the bigger to find how far off the estimate was.
 Estimated 15 cm, real 12.5 cm → 2.5 cm off

★ STRETCH PROBLEMS

- 1 Cara's class is tracking how far a swallow flies between visits to the bird-feeder. Over the spring, the swallow's flight path adds up to **88 km**. How many centimetres is that?
 Convert 88 km to cm.
- 2 The Camogie coach paces out a sprint lane under the floodlights, measuring **94 m** along the sideline. She wants to mark the lane with cones every metre and needs the length in centimetres for the training plan. How many centimetres is **94 m**?
 Convert 94 m to cm.
- 3 Cian estimates the length of a long-jump take-off strip in the yard as **87 cm**. He then measures it with a metre stick and finds it is actually **67 cm**. By how much is his estimate off?
- 4 In PE class, Aoife estimates the length of the long jump mat as **139 cm**. She then measures it with a tape and finds it is actually **146 cm**. By how many centimetres is her estimate off?
- 5 Cian estimates that the school noticeboard is **171 cm** wide. He then measures it with a metre stick and finds it is actually **178 cm** wide. By how much is his estimate off?
 A pupil estimates a length as 171 cm, then measures it as 178 cm. By how much is the estimate off?